Remarks

Claims 1-4 and 14-17 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,606,954 to Yamazaki et al. ("Yamazaki") or U.S. Patent Application Publication No. 2002/0134461 to Futura ("Futura"). All remaining claims, namely claims 5-13 and 18-25, have been rejected under 35 U.S.C. §103 and being obvious over Furuta in view of U.S. Patent No. 3,664,360 to Royle et al. ("Royle"). In response to these rejections, Applicant has cancelled claims 1-4 and 14-17 and has amended claims 5 and 18. Applicant submits that all rejections under §102(b) are now moot. Applicant respectfully traverses all other rejections under §103 as detailed below.

With respect to claims 5, 9, 18 and 21, all of which are now independent claims, the Examiner admits that the cited art does not anticipate the claimed subject matter. Specifically, the Examiner admits that Furuta does not teach the introduction of fuel vapor into a funnel at an angle to produce a vortex. Instead, the Examiner contends that it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Furuta to use angled introduction ports as shown in Royle. Applicant respectfully disagrees.

Contrary to the suggestion of the Examiner, Royle does not teach the use of angled introduction ports for the purpose of causing a vortex. Instead, the vortex flow in Royle is produced as a result of passing the main fluid flow across deflection surfaces or vanes 15. The angled ports 17a and 17b, which are downstream of the vanes 15, are used to control or throttle the vortex, not create it. (Royle, col. 1, line 66 – col. 2, line 16).

Furuta, like Royle, uses a deflection surface (specifically, angled grooves) to generate a vortex flow pattern. The deflection surface of Furuta, however, is located downstream of the fuel vapor introduction port 4. Given that Furuta and Royle both use a deflection surface to generate a vortex flow pattern, Applicant respectfully submits that there is no basis to conclude that one of ordinary skill in the art at the time of the invention would have been motivated to (1) replace the deflection surface of Furuta with angled entry ports to create a vortex flow or (2) modify the *upstream* fuel vapor port 4 of Furuta to mimic the *downstream* ports 17a and 17b of Royle.

Furthermore, Royle is directed to an entirely different art area than either the present application or the Furuta reference that forms the basis of the Examiner's §103 obviousness rejection. Applicant respectfully submits that one of skill in the art would not have been motivated to modify Furuta using the unrelated and non-analogous Royle reference.

All other pending claims depend from either claims 5, 9, 18 or 21, and are therefore patentable for at least the reasons stated above.

With respect to claim 5, Applicant further notes the following. Claim 5 has been amended to be rewritten in independent form and to include the limitations of original claims 1 and 2. Claim 5, as amended, recites a funnel having a cylindrical portion with a longitudinal axis and a fuel vapor port disposed through the cylindrical portion of the funnel, the fuel vapor port having a centerline disposed at a first angle less than 90° from a longitudinal axis of the cylindrical portion. Claim 5 further recites that in a plane perpendicular to the longitudinal axis of the funnel, the fuel vapor port directs the fuel vapor at a second angle less than 90° from a line tangent to an inner surface of the funnel at a point where fuel vapor enters the funnel. Applicant respectfully submits that the references relied upon for the rejection, neither alone nor in combination, disclose these features of amended claim 5.

The Examiner contends, with respect to Furuta, that fuel vapor from the vapor recirculation tube 4 enters the funnel 1 through a fuel vapor port (located at 5 in Fig. 2). The Examiner further contends that the funnel of Furuta includes a cylindrical portion through which the fuel vapor port (from conduit 4 at 5) is disposed. Applicant respectfully disagrees with the Examiner's characterization of the Furuta reference.

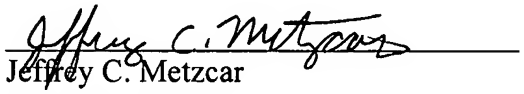
If, as the Examiner argues, the fuel vapor port of Furuta is located at reference numeral 5, then as best seen in Fig. 1 of Furuta, the fuel vapor port is disposed in a conical neck section 2 of the filler tube 1, rather than a cylindrical portion as claimed. Applicant, however, respectfully submits that the fuel vapor port of Furuta is located above annular passage 5 in the vicinity of deflector plate 13. It is further the Applicant's understanding, therefore, that Furuta does not disclose a fuel vapor port having a centerline disposed at a first angle less than 90° from the longitudinal axis of the funnel. Rather, it is Applicant's understanding that the fuel vapor enters the filler tube 1 of Furuta at a right angle and is subsequently deflected towards the outlet port.

For at least this additional reason, Applicant respectfully traverses the Examiner's rejection of claim 5 under §103 using Furuta in combination with Royle.

In light of the foregoing, Applicants submit that each pending claim of the application is patentable over the cited art. Accordingly, the application is believed to be in a condition for allowance, and a formal notice thereof is respectfully solicited.

The applicant(s) hereby authorizes the Commissioner under 37 C.F.R. §1.136(a)(3) to treat any paper that is filed in this application which requires an extension of time as incorporating a request for such an extension. The Commissioner is authorized to charge any additional fees required by this paper or to credit any overpayment to Deposit Account No. 20-0809.

Respectfully submitted,



Jeffrey C. Metzcar
Reg. No. 52,027

Date: May 1, 2006

THOMPSON HINE LLP
P.O. Box 8801
Dayton, OH 45401-8801
Telephone (937) 443-6841
Facsimile: (937) 443-6805